

OASIS OF INNOVATION

It's often said that education is important for the future. But what does that really mean? One country and its king are taking the adage seriously by supporting research and academics. SAP Spectrum visits Saudi Arabia.

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It's hot, almost unbearably so, and thick clouds of dust are swirling over Thuwal. When they finally settle, they reveal something you wouldn't expect to find in a small desert village on the Red Sea – an ultra-modern university with a sophisticated infrastructure, extraordinary research facilities, and an excellent academic environment. You rub your eyes to clear your vision, but it's still there, rising from the desert sands: the King Abdullah University of Science and Technology, KAUST for short.

What at first appears to be an audacious move is actually preparation for the country's future. The budding scientists at KAUST are researching topics such as photovoltaics; carbon capture and storage; biotechnology; nanotechnology; and oceanography – Saudi Arabia is aiming to compete with the top research institutes in the world. For King Abdullah bin Abdul Aziz Al Saud, this educational initiative is an important piece of his diversification strategy for the post-oil era. His country and people, especially young Saudis, will benefit from the university and the findings of its research. "The strategy and the vision of the king are very clear. He wants to leverage science, technology, and research not just to create a house of wisdom or knowledge, but also to generate commercial successes that can help attract the brightest and best people to work here in Saudi Arabia," says John Larson, chief information officer of KAUST. Commercialization is the buzzword here, and it plays a constant role in all efforts. "If we do a lot of science

and technology, but don't really create a commercial capability from some of the research, then we've not achieved the king's vision and objective."

It's in the mix

A quick look around the campus reveals that the king's vision also makes for a good time. The atmosphere is relaxed but professional; students and professors are absorbed in conversation as they walk from labs to lecture halls or to the student dorms right on the water. Next to the main cafeteria, small cafes and gathering areas invite students to linger a while. Offices and lecture halls are outfitted with the best equipment available; fiber optic cable and complete WiFi coverage provide fast and

and the faculty, administrative staff, design engineers, and construction workers add even more variety. "The work on and around the campus is now 85% complete," says project management specialist Shakeel Parkar. Several of the research labs are still under construction, but the most important buildings are up and running.

As is the university IT infrastructure – from the network to PCs, laptops, and iPhones, all the way up to supercomputers and software. Larson and his team of 150 people ensure that the cogs of research, academics, and administration fit together perfectly and never stop turning. Before construction began in 2008, teams drew up system blueprints and began software implementation, all before a single shovel had broken

THIS EDUCATIONAL INITIATIVE IS AN IMPORTANT PIECE OF THE DIVERSIFICATION STRATEGY FOR THE POST-OIL ERA.

easy access to data. The 14 square mile (36km²) campus boasts an independent infrastructure, its own power plant, and a desalinization plant to provide fresh water to the university. Around 600 students live here right now; they come from all over the world to work and study. They make for a colorful mixture,

ground in the Arabian sands. "Everything came together so fast, and this campus continues to grow so quickly – it really keeps us on our toes," says Larson. The pace has been extreme, and the team is just now able to concentrate on details. Administration and faculty had the same experience. "It's as if →

we're not only riding a bike," says enterprise applications manager Abdulmajeed Serajuddin, "but also finishing it in the process."

Building on a solid foundation

Many of the nails still being hammered down are not only related to hardware and infrastructure, but to software as well. "SAP is the rock-solid foundation for everything we do, and it's here to stay," says Larson. The core areas of employee management and the finance department as well as building and facilities management are running smoothly. But there are still difficulties with the integration of research labs and special educational demands that require customization and alternatives to the standard software packages. Serajuddin

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gives an example: "Our research area is organized as a matrix, not hierarchically. So that had to be taken into consideration during implementation as well as our guidelines for handling research funding, grant management, and scholarships." In addition, Blackboard, a content and course management software suite, and Millennium, a library and reference administration software package, had to be connected to the SAP backbone.

"Everything that a student does here happens with the help of IT," says Parkar. University applications, matriculation, visa applications, creation of individual student schedules, submission of student work, database research, and the use of modeling and simulation tools – these are just a few examples that illustrate the breadth and complexity of the university's IT operations. Certain aspects of academic operations at



KAUST: an ultra-modern university on the Red Sea.

KAUST leave something to be desired, Larson says. "Procedures at a university don't always reflect standard business processes, and this can make it a rough road for IT service providers," he explains. The university, according to Larson, had difficulty finding qualified consultants for solutions such as SAP Student Lifecycle Management. This software is still young, and SAP itself only has limited implementation experience. "We're glad to be receiving direct support now from the experts in Wall-dorf and other locations," adds Praveen Garapati, lead SAP functional specialist. The university is also planning to install the latest enhancement packages as quickly as possible in order to bring the system up to date, both from a technical and functional standpoint. Says Garapati, "The innovations that SAP has on the road map look very promising and confirm that we're on the right track."

Organization out of chaos

And what are the academics saying? What happens, for example, if a student neglects to turn in a homework assignment relevant to the next exam? What happens if two professors want to share one post-doc position and fund it together? How can it be ensured on the software side that an order will be processed for laboratory materials only available in a foreign country? "Some services couldn't function at all because the processes were completely unclear," says Khaled Salama, assistant professor of Electrical Engineering at KAUST. But since then, most of the workflows have been defined, and professors and other employees have access to services

through SAP NetWeaver Portal. Larson calls this "bringing people and processes together," and this is how he sees his job, too. "It's not only about who writes what code when and where. It's also about looking at the context of how people work with each other, how they live the processes. Only with this attitude can we recognize issues and address them." This holistic approach is characteristic of the university as a whole. Students from different disciplines and different countries come together to study, research, and live here. There is continuous innovation, both large and small, true to the king's vision. So what is KAUST? An academic oasis in the Saudi desert? A place of shared interests and dreams? An investment in the future of the Saudi Arabian kingdom and its people? A little bit of all of these – and most certainly a vision that will become a reality, thanks in part to SAP. ■

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 Link list: www.sap-spectrum.com

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